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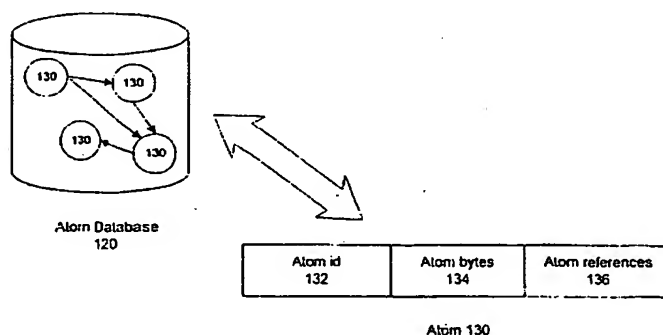
(54) Title: SOFTWARE ATOMIZATION

Atom Database 120

| Atom id 132 | Atom bytes 134 | Atom references 136 |

Atom 130

(57) Abstract: Software atomization provides a method of loading atomized computer program code and data on demand by loading, from an atom database, into a memory, an atom defining code or data in a fine-grained, individually addressable manner. Atoms comprise an atom identifier, computer program code or data information and computer program code or data reference information. The computer program code or data information is modified by transforming the reference information into memory addresses. The present invention provides for the lazy loading of data both implicitly and explicitly. Data is lazily loaded implicitly when it is referenced from code that is lazily loaded. Data is lazily loaded explicitly by encoding a referencing atom identifier such that the referenced data atom is not loaded until actually accessed at runtime.